

PATENT APPLICATION

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANTS: Bossemeyer

EXAMINER: Not Assigned

SERIAL NO.: Not Assigned

GROUP:

FILED:

CASE NO.: AMT-9707C1

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March 23, 2001

**PRELIMINARY AMENDMENT**

Honorable Commissioner of  
Patents and Trademarks  
Washington, D.C. 20231

Sir:

Please enter the following amendment prior to examination.

In The Claims:

Please cancel claims 23-34 and add new claims 35-44.

35. A speech reference enrollment method, comprising the steps of:

- (a) receiving a first utterance of a vocabulary word;
- (b) extracting a plurality of features from the first utterance;
- (c) determining a signal to noise ratio of the first utterance;
- (d) when the signal to noise ratio is less than a predetermined signal to noise ratio, increasing a gain of a voice amplifier;
- (e) receiving a second utterance of the vocabulary word; and
- (f) extracting the plurality of features from the second utterance.

36. The method of claim 35, further including the steps of:

(g) determining a first similarity between the plurality of features from the first utterance and the plurality of features from the second utterance;

(h) when the first similarity is less than a predetermined similarity, requesting a user to speak a third utterance of the vocabulary word;

(i) extracting the plurality of features from the third utterance;

(j) determining a second similarity between the plurality of features from the first utterance and the plurality of features from the third utterance; and

(k) when the second similarity is greater than or equal to the predetermined similarity, forming a reference for the vocabulary word.

37. The method of claim 36, further including the steps of:

(l) when the second similarity is less than the predetermined similarity, determining a third similarity between the plurality of features from the second utterance and the plurality of features from the third utterance;

(m) when the third similarity is greater than or equal to the predetermined similarity, forming the reference for the vocabulary word.

38. The method of claim 35, wherein step (f) further includes the steps of:

(f1) determining a signal to noise ratio of the first utterance;  
(f2) when the signal to noise ratio is less than a predetermined signal to noise ratio, increasing a gain of a voice amplifier and proceeding to step (e);

39. A speech recognition, verification and enrollment system, comprising:

an adjustable gain amplifier connected to an input speech signal;  
an amplitude comparator having a first input connected to the output of the adjustable gain amplifier and a second input connected to a saturation threshold; and

a feature comparator is connected to the output of the feature extractor, where the gain input can be adjusted both up and down during the speech input.

40. The system of claim 39, further including,

a feature extractor is connected to the output of the adjustable gain amplifier;

41. The system of claim 39, further including,

a signal to noise comparator having a first input connected to the signal to noise meter and a second input connected to a threshold, an output of the signal to noise comparator is connected to a gain input of the adjustable gain amplifier.

42. The system of claim 39, further including an amplitude threshold detector connected to the input speech signal.

43. The system of claim 42, further including a timer connected to an output of the amplitude threshold detector.

44. The system of claim 40, wherein the feature extractor forms an amplitude histogram.

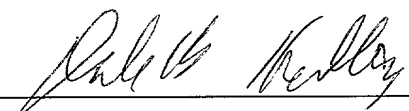
Remarks

The applicants have canceled claims 23-34 and have added new claims 35-44, which are fully supported by the specification.

Respectfully submitted,

(Bossemeyer)

By

  
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